



Attachment B

153437

Hazardous Waste Quantity

In the fall of 1984, IEPA bid an interim clean-up project at the site. Immediately prior to construction initiation IEPA was alerted to the possibility of waste containing drums existing in the clean-up area at very shallow depth. Because such drums would have significantly affected the clean-up action and for safety considerations, IEPA did not proceed with the clean-up action and deemed further investigation was required. The documented waste quantities for the interim clean-up action were bid as follows: The quantities do not include the suspected drums.

1. Two "oil pools" estimated at 51 cubic yards - Analyses attached.

2. Debris in and heavily contaminated soil underlying oil pools estimated at 153 cubic yards.

3. Surficial drums estimated at 40 cubic yards.

4. Solidified spill material with estimated volume of 23 cubic yards - Analyses attached.

The Ron St. John report documents the existence and effects of a previous truck washing impoundment adjacent to Dead Creek. The estimated waste volume disposed of in the impoundment equals 819 cubic yards. The quantity estimation and adjacent well sampling analysis are attached.

The quantities described above are documentable estimates of waste quantity. Their total allows a score of 6 to be assigned for Hazardous Waste Quantity. Other known areas of hazardous waste exist at the site but have not been quantified. They include:

1. The creekbed itself with high levels of organic compounds and metals.
2. Suspected drums buried in large quantities in the vicinity of the site.
3. Contaminated water in the creek between Queeny Avenue and Judith Lane and the pond north of Judith Lane.
4. Highly contaminated soil north of Queeny Avenue on Cerro Copper property.

In short, it is IEPA's belief that the quantified waste volumes cited above represent a very small percentage of the waste volume existing at the site and that the revision of Hazardous Waste Quantity to 6 is conservative.

SKD:mgg0642e/16

Facility name: Cahokia / Dead Creek

Location: Sauget / Cahokia, Illinois (St. Clair County)

EPA Region: 5

Person(s) in charge of the facility: N/A: property under control of multiple private ownerships.

Name of Reviewer: S. Dunn Date: 3/21/85

General description of the facility:  
 (For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Unlined creekbed and surrounding area. Creekbed has received direct industrial discharges and surrounding area has been used for direct dumping of materials. Landfills adjacent to creek have received waste including hazardous waste since 1927.

Scores:  $S_M = 29.23$   $S_{GW} = 5.65$   $S_{SW} = 10.07$   $S_a = 19.23$   
 $S_{FE} = 52.5$   
 $S_{DC} = 50.0$

**FIGURE 1**  
**HRS COVER SHEET**

- Bibliography
- Air data not provided
- Many references needed
- Waste quantity is questionable

Facility name: Cahokia / Dead Creek

Location: Saget / Cahokia, Illinois (St. Clair County)

EPA Region: 5

Person(s) in charge of the facility: N/A: property under control of multiple private ownerships.

Name of Reviewer: S. Dunn Date: 3/21/85

General description of the facility:  
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Unlined creekbed and surrounding area. Creekbed has received direct industrial discharges and surrounding area has been used for direct dumping of materials. Landfills adjacent to creek have received waste including hazardous waste since 1927.

Scores:  $S_M = 29.23$   $S_{GW} = 5.65$   $S_{SW} = 10.07$   $S_a = 49.23$   
 $S_{FE} = 52.5$   
 $S_{DC} = 50.0$

**FIGURE 1**  
**HRS COVER SHEET**

| Ground Water Route Work Sheet   |  |                 |                 |               |                   |  |
|---|--|-----------------|-----------------|---------------|-------------------|--|
| Rating Factor   | Assigned Value<br>(Circle One)                       | Multi-<br>plier | Score           | Max.<br>Score | Ref.<br>(Section) |  |
| <b>1</b> Observed Release   | 0 <u>45</u>  | 1               | <u>45</u>       | 45            | 3.1               |  |
| If observed release is given a score of 45, proceed to line <b>4</b> .<br>If observed release is given a score of 0, proceed to line <b>2</b> .       |  |                 |                 |               |                   |  |
| <b>2</b> Route Characteristics  |  |                 |                 |               | 3.2               |  |
| Depth to Aquifer of Concern   | 0 1 2 3  | 2               |                 | 6             |                   |  |
| Net Precipitation   | 0 1 2 3  | 1               |                 | 3             |                   |  |
| Permeability of the Unsaturated Zone  | 0 1 2 3  | 1               |                 | 3             |                   |  |
| Physical State  | 0 1 2 3  | 1               |                 | 3             |                   |  |
| Total Route Characteristics Score   |  |                 | <u>—</u>        | 15            |                   |  |
| <b>3</b> Containment  | 0 1 2 3  | 1               | <u>—</u>        | 3             | 3.3               |  |
| <b>4</b> Waste Characteristics  |  |                 |                 |               | 3.4               |  |
| Toxicity/Persistence  | 0 3 6 9 12 15 <u>18</u>                              | 1               | <u>18</u>       | 18            |                   |  |
| Hazardous Waste Quantity  | 0 1 2 3 4 5 <u>6</u> 7 8                             | 1               | <u>6</u>        | 8             |                   |  |
| Total Waste Characteristics Score   |  |                 | <u>24</u>       | 26            |                   |  |
| <b>5</b> Targets  |  |                 |                 |               | 3.5               |  |
| Ground Water Use  | 0 <u>1</u> 2 3                                       | 3               | <u>3</u>        | 9             |                   |  |
| Distance to Nearest Well/Population Served  | 0 4 6 8 10<br><u>0</u> 12 16 18 20<br>24 30 32 35 40 | 1               | <u>—</u>        | 40            |                   |  |
| Total Targets Score   |  |                 | <u>3</u>        | 49            |                   |  |
| <b>6</b> If line <b>1</b> is 45, multiply <b>1</b> x <b>4</b> x <b>5</b><br>If line <b>1</b> is 0, multiply <b>2</b> x <b>3</b> x <b>4</b> x <b>5</b> |  |                 | <u>3,240</u>    | 57,330        |                   |  |
| <b>7</b> Divide line <b>6</b> by 57,330 and multiply by 100   |  |                 | $S_{gw} = 5.65$ |               |                   |  |

**FIGURE 2**  
**GROUND WATER ROUTE WORK SHEET**

| Surface Water Route Work Sheet  |  |             |                  |            |                |  |
|---|--|-------------|------------------|------------|----------------|--|
| Rating Factor   | Assigned Value<br>(Circle One)                       | Multi-plier | Score            | Max. Score | Ref. (Section) |  |
| <b>1</b> Observed Release   | 0 <u>45</u>  | 1           | <u>45</u>        | 45         | 4.1            |  |
| If observed release is given a value of 45, proceed to line <b>4</b> .<br>If observed release is given a value of 0, proceed to line <b>2</b> .       |  |             |                  |            |                |  |
| <b>2</b> Route Characteristics  |  |             |                  |            | 4.2            |  |
| Facility Slope and Intervening Terrain  | 0 1 2 3  | 1           |                  | 3          |                |  |
| 1-yr. 24-hr. Rainfall   | 0 1 2 3  | 1           |                  | 3          |                |  |
| Distance to Nearest Surface Water   | 0 1 2 3  | 2           |                  | 6          |                |  |
| Physical State  | 0 1 2 3  | 1           |                  | 3          |                |  |
| Total Route Characteristics Score   |  |             | —                | 15         |                |  |
| <b>3</b> Containment  | 0 1 2 3  | 1           | —                | 3          | 4.3            |  |
| <b>4</b> Waste Characteristics  |  |             |                  |            | 4.4            |  |
| Toxicity/Persistence  | 0 3 6 9 12 15 <u>18</u>                              | 1           | <u>18</u>        | 18         |                |  |
| Hazardous Waste Quantity  | 0 1 2 3 4 5 <u>6</u> 7 8                             | 1           | <u>6</u>         | 8          |                |  |
| Total Waste Characteristics Score   |  |             | <u>24</u>        | 26         |                |  |
| <b>5</b> Targets  |  |             |                  |            | 4.5            |  |
| Surface Water Use   | 0 1 <u>2</u> 3                                       | 3           | <u>6</u>         | 9          |                |  |
| Distance to a Sensitive Environment   | <u>0</u> 1 2 3                                       | 2           | —                | 6          |                |  |
| Population Served/Distance to Water Intake Downstream   | } <u>0</u> 4 6 8 10<br>12 16 18 20<br>24 30 32 35 40 | 1           | —                | 40         |                |  |
| Total Targets Score   |  |             | <u>6</u>         | 55         |                |  |
| <b>6</b> If line <b>1</b> is 45, multiply <b>1</b> x <b>4</b> x <b>5</b><br>If line <b>1</b> is 0, multiply <b>2</b> x <b>3</b> x <b>4</b> x <b>5</b> |  |             | <u>6,480</u>     | 64,350     |                |  |
| <b>7</b> Divide line <b>6</b> by 64,350 and multiply by 100   |  |             | $S_{SW} = 10.07$ |            |                |  |

**FIGURE 7**  
**SURFACE WATER ROUTE WORK SHEET**

| Air Route Work Sheet   |  |             |                        |            |                |
|--|--|-------------|------------------------|------------|----------------|
| Rating Factor  | Assigned Value<br>(Circle One)                 | Multi-plier | Score                  | Max. Score | Ref. (Section) |
| <b>1</b> Observed Release  | 0                      45                      | 1           | 45                     | 45         | 5.1            |
| Date and Location: <u>3/23/82      Dead Creek creekbed</u>   |  |             |                        |            |                |
| Sampling Protocol: <u>HNU pli, OVA, explosimeter, O<sub>2</sub> meter, rad. met.</u>   |  |             |                        |            |                |
| If line <b>1</b> is 0, the S <sub>a</sub> = 0. Enter on line <b>5</b> .<br>If line <b>1</b> is 45, then proceed to line <b>2</b> . |  |             |                        |            |                |
| <b>2</b> Waste Characteristics   |  |             |                        |            | 5.2            |
| Reactivity and Incompatibility   | 0 <u>1</u> 2   3                               | 1           | 1                      | 3          |                |
| Toxicity   | 0   1   2 <u>3</u>                             | 3           | 9                      | 9          |                |
| Hazardous Waste Quantity   | 0   1   2   3   4   5 <u>6</u> 7   8           | 1           | 6                      | 8          |                |
| Total Waste Characteristics Score  |  |             | 16                     | 20         |                |
| <b>3</b> Targets   |  |             |                        |            | 5.3            |
| Population Within 4-Mile Radius  | 0   9   12   15   18<br><u>21</u> 24   27   30 | 1           | 21                     | 30         |                |
| Distance to Sensitive Environment  | <u>0</u> 1   2   3                             | 2           | 0                      | 8          |                |
| Land Use   | 0   1   2 <u>3</u>                             | 1           | 3                      | 3          |                |
| Total Targets Score  |  |             | 24                     | 39         |                |
| <b>4</b> Multiply <b>1</b> x <b>2</b> x <b>3</b>   |  |             | 17,280                 | 35,100     |                |
| <b>5</b> Divide line <b>4</b> by 35,100 and multiply by 100  |  |             | S <sub>a</sub> = 49.23 |            |                |

**FIGURE 9**  
**AIR ROUTE WORK SHEET**

|   | s     | s <sup>2</sup> |
|---|-------|----------------|
| Groundwater Route Score (S <sub>gw</sub> )          | 5.65  | 31.92          |
| Surface Water Route Score (S <sub>sw</sub> )        | 10.07 | 101.40         |
| Air Route Score (S <sub>a</sub> )                   | 49.23 | 2,423.59       |
| $S_{gw}^2 + S_{sw}^2 + S_a^2$                       |       | 2,556.91       |
| $\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$                |       | 50.57          |
| $\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$ |       | 29.23          |

**FIGURE 10**  
**WORKSHEET FOR COMPUTING S<sub>M</sub>**

| Fire and Explosion Work Sheet                              |                                |             |                   |            |                |  |
|--|--------------------------------|-------------|-------------------|------------|----------------|--|
| Rating Factor  | Assigned Value<br>(Circle One) | Multi-plier | Score             | Max. Score | Ref. (Section) |  |
| <b>1</b> Containment                                       | 1 <u>3</u>                     | 1           | <u>3</u>          | 3          | 7.1            |  |
| <b>2</b> Waste Characteristics                             |                                |             |                   |            | 7.2            |  |
| Direct Evidence  | 0 <u>3</u>                     | 1           | <u>3</u>          | 3          |                |  |
| Ignitability   | 0 1 2 <u>3</u>                 | 1           | <u>3</u>          | 3          |                |  |
| Reactivity   | 0 <u>1</u> 2 3                 | 1           | <u>1</u>          | 3          |                |  |
| Incompatibility  | 0 <u>1</u> 2 3                 | 1           | <u>1</u>          | 3          |                |  |
| Hazardous Waste Quantity                                   | 0 1 2 3 4 5 <u>6</u> 7 8       | 1           | <u>6</u>          | 8          |                |  |
| Total Waste Characteristics Score                          |                                |             | <u>14</u>         | 20         |                |  |
| <b>3</b> Targets   |                                |             |                   |            | 7.3            |  |
| Distance to Nearest Population                             | 0 1 2 <u>3</u> 4 5             | 1           | <u>3</u>          | 5          |                |  |
| Distance to Nearest Building                               | 0 1 <u>2</u> 3                 | 1           | <u>2</u>          | 3          |                |  |
| Distance to Sensitive Environment                          | <u>0</u> 1 2 3                 | 1           | <u>0</u>          | 3          |                |  |
| Land Use   | 0 1 2 <u>3</u>                 | 1           | <u>3</u>          | 3          |                |  |
| Population Within 2-Mile Radius                            | 0 1 2 3 4 <u>5</u>             | 1           | <u>5</u>          | 5          |                |  |
| Buildings Within 2-Mile Radius                             | 0 1 2 3 4 <u>5</u>             | 1           | <u>5</u>          | 5          |                |  |
| Total Targets Score  |                                |             | <u>18</u>         | 24         |                |  |
| <b>4</b> Multiply <b>1</b> x <b>2</b> x <b>3</b>           |                                |             | <u>756</u>        | 1,440      |                |  |
| <b>5</b> Divide line <b>4</b> by 1,440 and multiply by 100 |                                |             | SFE = <u>52.5</u> |            |                |  |

**FIGURE 11  
FIRE AND EXPLOSION WORK SHEET**



| Direct Contact Work Sheet   |                                |                 |             |               |                   |  |
|---|--------------------------------|-----------------|-------------|---------------|-------------------|--|
| Rating Factor   | Assigned Value<br>(Circle One) | Multi-<br>plier | Score       | Max.<br>Score | Ref.<br>(Section) |  |
| <b>1</b> Observed Incident  | 0                  45          | 1               | 45          | 45            | 8.1               |  |
| If line <b>1</b> is 45, proceed to line <b>4</b><br>If line <b>1</b> is 0, proceed to line <b>2</b>   |                                |                 |             |               |                   |  |
| <b>2</b> Accessibility  | 0 1 2 3                        | 1               | —           | 3             | 8.2               |  |
| <b>3</b> Containment  | 0    15                        | 1               | —           | 15            | 8.3               |  |
| <b>4</b> Waste Characteristics<br>Toxicity  | 0 1 2 <u>3</u>                 | 5               | 15          | 15            | 8.4               |  |
| <b>5</b> Targets  |                                |                 |             |               | 8.5               |  |
| Population Within a<br>1-Mile Radius  | 0 1 2 3 <u>4</u> 5             | 4               | 16          | 20            |                   |  |
| Distance to a<br>Critical Habitat   | <u>0</u> 1 2 3                 | 4               | 0           | 12            |                   |  |
| Total Targets Score   |                                |                 | 16          | 32            |                   |  |
| <b>6</b> If line <b>1</b> is 45, multiply <b>1</b> x <b>4</b> x <b>5</b><br>If line <b>1</b> is 0, multiply <b>2</b> x <b>3</b> x <b>4</b> x <b>5</b> |                                |                 | 10,800      | 21,600        |                   |  |
| <b>7</b> Divide line <b>6</b> by 21,600 and multiply by 100   |                                |                 | SDC = 50.00 |               |                   |  |

**FIGURE 12**  
**DIRECT CONTACT WORK SHEET**

Documentation Records for Hazardous  
Ranking System

Facility Name: Cahokia/Dead Creek  
Location: Sauget, Illinois (St. Clair County)

A. Groundwater Route (SGW = 5.65)

1. Observed Release - Score 45

a. Contaminants detected offsite: PCB's, chloroaniline, dichlorobenzene, copper, manganese, lead, cyclohexane, chlorophenol, aliphatic hydrocarbons, silver, nickel, arsenic, cadmium, phosphorous.

b. Documented by Attachment A

2. Route Characteristics  
-- N/A: observed release

3. Containment  
-- N/A: observed release

4. Waste Characteristics -- Score 24

a. Toxicity/Persistence -- Score 18

|                 | <u>Toxicity</u> | <u>Persistence</u> |
|-----------------|-----------------|--------------------|
| PCB's           | 3               | 3                  |
| Chloroaniline   | 3               | 1                  |
| Dichlorobenzene | 2               | 2                  |
| Cyclohexane     | 2               | 2                  |

b. Hazardous Waste Quality -- Score 6  
-- in excess of 1,084 cubic yards documented by Attachment B

5. Targets -- Score 3

a. Groundwater Use -- Score 1  
-- industrial use only

b. Distance to Nearest Well/Population  
Served -- Score 0  
-- no use for potable water

B. Surface Water Route (SSW = 10.07)

1. Observed Release -- Score 45
  - a. contaminants deposited directly in water
  - b. documented in Ron St. John Report (04/81)
2. Route Characteristics
  - N/A: observed release
3. Containment
  - N/A: observed release
4. Waste Characteristics -- Score 24
  - refer to Groundwater Route
5. Targets -- Score 6
  - a. Surface water use -- Score 6
    - Creek flows through residential areas and is used for recreational purposes, particularly by children.
  - b. Distance to a Sensitive Environmental -- N/A
  - c. Population Served/Distance to Water Intake Downstream -- N/A

C. Air Route (SA = 49.23)

1. Observed Release -- Score 45
  - a. Date and Location: March 23, 1982 -- In creek.
  - b. Sampling Protocol: Organic Vapor Analyzer (OVA) and HNU, Photo-Ionizer with 10.2 ev and 11.7 ev lamps. Also explosimeter, radiation survey meter, O<sub>2</sub> indicator
  - c. Documentation provided by Attachment D

2. Waste Characteristics -- Score 16

a. Reactivity and Compatibility -- Score 1

-- Phosphorous, Arsenic

b. Toxicity -- Score 9

-- PCB's 3

-- Dichlorophenol 3

-- Chloroaniline 3

c. Hazardous Waste Quantity -- Score 6

3. Targets -- Score 24

a. Population within 4-mile radius -- Score 21

-- 6,100 people within 0.5-1.0 mile of site

b. Distance to Sensitive Environment -- Score 0

-- greater than 2 miles

c. Land Use -- Score 3

-- agricultural, residential, and industrial areas within 0.25 mile

D. Direct Contact and Fire and Explosion Work Sheets documented by Attachment E.

SD:dks/585e, 81-83

Documentation Records for Hazardous  
Ranking System

Facility Name: Cahokia/Dead Creek  
Location: Sauget, Illinois (St. Clair County)

*What is location of wells?  
what horizons are they in?*

A. Groundwater Route (SGW = 5.65)

1. Observed Release - Score 45

a. Contaminants detected offsite: PCB's, chloroaniline, dichlorobenzene, copper, manganese, lead, cyclohexane, chlorophenol, aliphatic hydrocarbons, silver, nickel, arsenic, cadmium, phosphorous.

b. Documented by Attachment A

2. Route Characteristics  
-- N/A: observed release

3. Containment  
-- N/A: observed release

4. Waste Characteristics -- Score 24

a. Toxicity/Persistence -- Score 18

|                 | <u>Toxicity</u> | <u>Persistence</u> |
|-----------------|-----------------|--------------------|
| PCB's           | 3               | 3                  |
| Chloroaniline   | 3               | 1                  |
| Dichlorobenzene | 2               | 2                  |
| Cyclohexane     | 2               | 2                  |

b. Hazardous Waste Quality -- Score 6  
-- in excess of 1,084 cubic yards documented by Attachment B

*Questionable as noted in attachment*

5. Targets -- Score 3

a. Groundwater Use -- Score 1  
-- industrial use only *where's reference?*

b. Distance to Nearest Well/Population Served -- Score 0  
-- no use for potable water

B. Surface Water Route (SSW = 10.07)

1. Observed Release -- Score 45

- a. contaminants deposited directly in water *washing of trucks*
- b. documented in Ron St. John Report (04/81)

2. Route Characteristics

-- N/A: observed release

3. Containment

-- N/A: observed release

4. Waste Characteristics -- Score 24

-- refer to Groundwater Route ←

*not the same*

5. Targets -- Score 6

a. Surface water use -- Score 6

-- Creek flows through residential areas and is used for recreational purposes, particularly by children.

*→ Reference?*

b. Distance to a Sensitive Environmental -- N/A

c. Population Served/Distance to Water Intake Downstream -- N/A

C. Air Route (SA = 49.23)

1. Observed Release -- Score 45

a. Date and Location: March 23, 1982 -- In creek.

b. Sampling Protocol: Organic Vapor Analyzer (OVA) and HNU, Photo-Ionizer with 10.2 ev and 11.7 ev lamps. Also explosimeter, radiation survey meter, O<sub>2</sub> indicator

c. Documentation provided by Attachment D -- attachment D has no sampling data!

2. Waste Characteristics -- Score 16

a. Reactivity and Compatibility -- Score 1

-- Phosphorous, Arsenic

*Reference?*

b. Toxicity -- Score 9

-- PCB's 3

-- Dichlorophenol 3

-- Chloroaniline 3

c. Hazardous Waste Quantity -- Score 6

3. Targets -- Score 24

a. Population within 4-mile radius -- Score 21

-- 6,100 people within 0.5-1.0 mile of site

*Reference?*

b. Distance to Sensitive Environment -- Score 0

-- greater than 2 miles

c. Land Use -- Score 3

-- agricultural, residential, and industrial areas within 0.25 mile

*Reference?*

D. Direct Contact and Fire and Explosion Work Sheets documented by Attachment E.

SD:dks/585e, 81-83